ARTS OF THE ENVIRONMENT

EDITED BY GYORGY KEPES

George Braziller, New York

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PULSA
THE CITY AS AN ARTWORK

The total history of man-made objects, including the present technology of communication and transportation, is an artifact system. The largest artifact system presently in existence is the city; but it will soon be superseded by global communication networks and other large-scale information systems. In order for these systems to be used successfully, new politics and procedures which are inherent in them must be employed.

The city is composed of soft information systems as well as hard architectural systems; the information systems are becoming more architectural, while the architecture is becoming less object-like and more systemic. The city is now a flexible, mutating object in the process of constant creation and destruction; future generations of cities may become something like artificial planets moving through space.

People evolve within the city, carrying, generating, and receiving information; they use architecture for protection from cultural as well as natural elements, as an extension of themselves, and as space to conduct and experience the rituals and ceremonies of life in a technological society. Printed circuit card designs and village plans from primitive societies can both serve as models for urban organization as a functional manifestation of the inhabitant's culture.

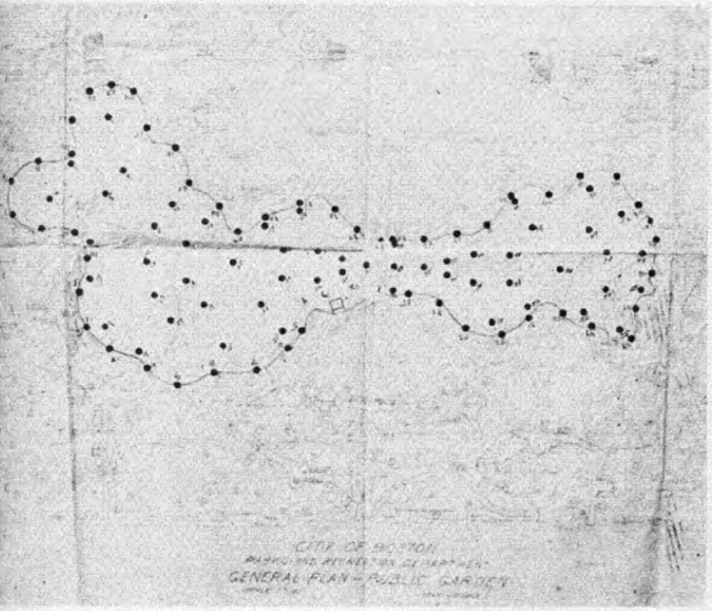
It is oversimplistic to view the city as a symbol of the dichotomy between the ideals of nature and man: the technologically polluted city as opposed to rustic wilderness. This false issue is seized upon rather than the real issues, such as converting from our wartime economy to the creative peacetime development of resources that might improve the level of life, the exploration of alternative life styles, and helping to establish global information systems.

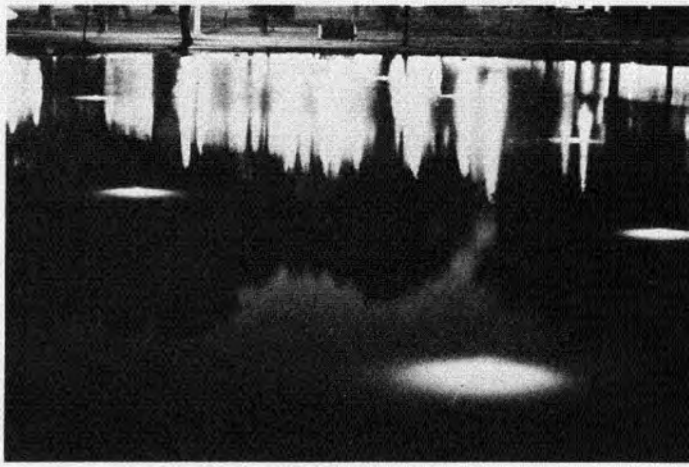
Fig. 1. Pond, Boston Public Garden, Boston, Mass., October 8–27, 1968

Two distinct levels of sound-light activity were apparent in the city at night: the overall static, silent point-source illumination on urban structures and the noisy ribbons of striating vehicular flow. An interface was provided by the sound-light installation in downtown Boston's Public Garden. Fifty-five xenon strobes were submerged in the four-acre pond, and fifty-five polyplanar speakers were placed above water around the pond's perimeter. These output devices were programmed differently each night, with elements of analog and digital computers, a punch-paper tape reader, a signal synthesizer, and magnetic tape.

The intention was to integrate technological activities which characterize the functioning of the city with the city's physical structure. The demonstration reflected Pulsa's conviction that *public art must treat all parameters of the urban and technological environment as potential media for artistic expression* in order to introduce these concepts on a large scale into the cities of the future.

A. Elevated view over pond (lower left) of city of Boston at night.
B. Map of installation in pond and surrounding garden.
C. View across pond at night.


CITY OF BOSTON
PARKS AND RECREATION DEPARTMENT
GENERAL PLAN — PUBLIC GARDEN



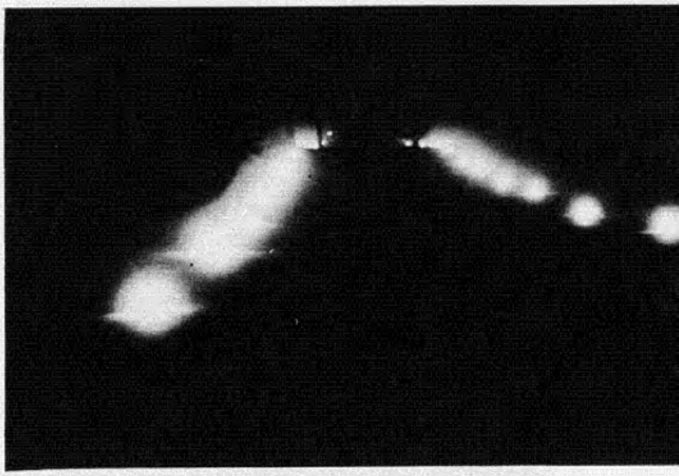
Even though it epitomizes the cultural in opposition to the natural, technology is not the enemy of nature; the problem lies rather in the inefficient and exploitative uses of technology. The few developments of defense technology which could be useful to the artist, such as pattern recognition equipment and some observational satellite technology, are classified secrets. The space program research in general may be more beneficial to mankind, but it cannot be meaningful within the context of the overlooked priority of the city.

It should be realized that the artifact system which is a city, is an art object. The American city is not the result of intelligent design. It contains little freely accessible public space except for partly preserved parks and waterways which recall the rustic spaces of the pre-city environment. The city should be recognized as separate from nature, and its artificiality should be pursued as a meaningful quality. It contains no facilities which enable one to perceive the city and to apprehend its beauty, nor are there unrestricted public experiments to redefine the urban environment in terms which clarify and support the reality of man's existence within the city. Such projects should not be speculative, but ongoing environmental experiments using real materials. They might include widespread systems of read-outs of the city's resources: the availability of water, distribution of electric power, transportation flow. Other experiments could be large-scale environmental art works designed to be part of public spaces; public as well as private sensoriums; silent rooms for rest and meditation; and computer storage of facts, statistics, and the special problems and history of urban evolution so that, eventually, projected developments and systems could be realized. Super-sensory areas should be created that would make use of the technology developed from research in bio-feedback, artificial intelligence, body navigation similar to space travel to the moon, and telepathic experiments which demonstrate the relativistic nature of time and energy flow in travel and communication.

No existing systems express on a large scale the living gestalt, the changing nature of the urban energy flow, except highways, whose optimum use is inter-city travel, and other transport systems that are generally hidden or based outside urban complexes. At night the city's lights make it function more on a level of pure information. The artificial aspect of the city is most apparent and meaningful at this time, but it should be pushed further. Emblematic energy configuration could identify individual cities for travelers. Cities should have special internal areas which are like the nightscape: heightened artificial environments within which people can experience overviews of the city, the city as spacecraft, data-gathering centers, and information outputs.

Fig. 2. Yale Golf Course, November 1968–March 1969

A. Experiments in large-scale, linear, and matrix
   distributions in open terrain,
   using the Boston pond light-sound system.
B. The addition of a small computer provided an
   extended range of program modulations.
   Ideas began to form of live-time feedback
   between the presence of people and the output
   information.



If the various life-support systems, like heat, water, electricity, communication, and transportation were more visible, they would be more accessible and better incorporated into the design of the city. If their function and relevance were generally better understood these systems would lose their mystery, demand less attention, and be easier to repair.

The outdated water systems of many cities were designed for smaller populations, yet they are still used and are delivering polluted water. The inaccessibility of these systems for redesign and repair results from efforts to hide the technology which makes life possible. Much of the design in this country is based on an aesthetic of concealment and a concern for picturesque facades; the unstated goal is an environment superficially resembling a pre-technological society. This nostalgia leads not only to malfunction, but to a basic human alienation from the systems which make life in a given environment possible.

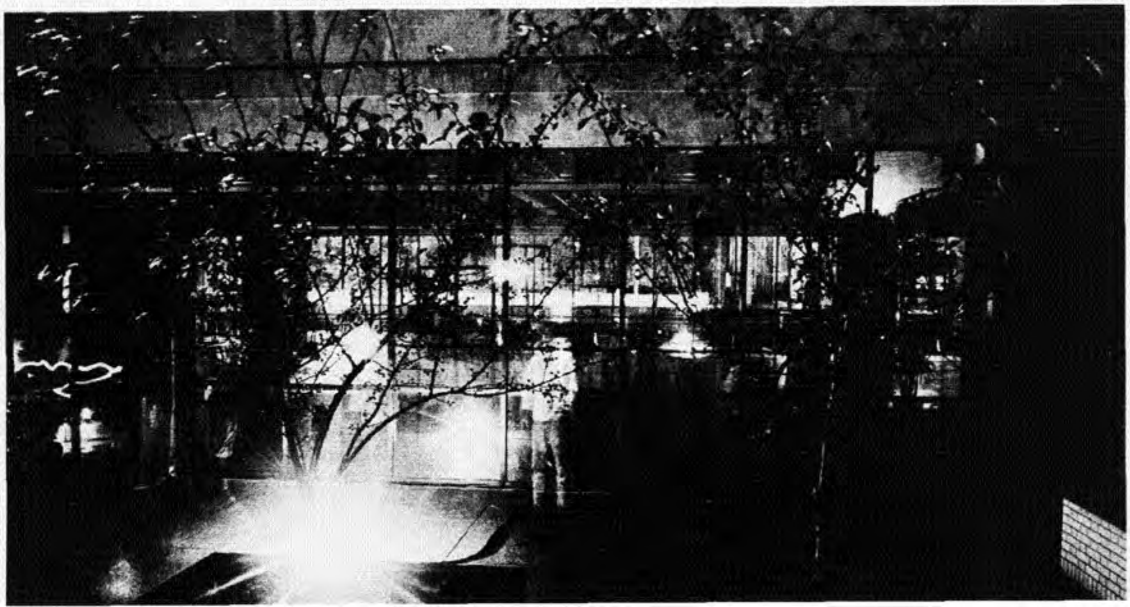
Fig. 3. Wadsworth Atheneum, Hartford, Connecticut, October–November 1969, view from the interior courtyard, looking through the temperature-controlled gallery to the city streets.

Three simultaneous, independent systems:

A. The existing temperature and humidity control system was used to generate a twenty-minute cycle of cold-wet, hot-dry conditions—a change of about 25° (from 55° to 80°).

B. Fourteen strobe lights were installed outside the gallery's glass walls in the courtyard and streets, which produced several overlays of reflective patterns.

C. A sound system with inputs from a dozen directional microphones was located in various spaces inside and outside the museum. These sounds were gated (switched) by photocell inputs to an automatic program that responded to the strobe lights and changing sunlight conditions, which selected, mixed, and circulated various channels to six loudspeakers located at the corners and midpoints of the room.



The finiteness and perimeters of a city should be recognized as defined by the resources necessary for survival and the limitations of the systems which carry these energies into the city. Urban conglomerations are not capable of unlimited expansion. The electrical "brownouts" in New York City during the summer of 1970 elucidate the folly of the notion that electricity, automobiles, good food, and so on, come from inexhaustible sources that can expand continually with the application of economic and political power. The latter represents only one mode of energy manipulation, a mode that is manifested in monolithic artifices, buildings, private fortunes, nations, man on the moon, and is maintained by unexamined and insupportable ideas about the survival of intelligent entities. Survival of the fittest is a simplistic abstraction; it purports to explain the existence of isolated competitive individuals, but it is actually a tautology that obscures the complex nature of interrelated parts of existence.

The power of the city has been shaped by man, but the present system withholds from individuals its natural resources. The result is the city's fixed and isolated functional structures—insulated offices, insulated private residences, insulated manufacturing centers—all of which are commercial modules that offer little possibility for interaction among the inhabitants. This is reflected in the needless replication of tools and services provided separately for individuals and families, so that each person or family has its own car, house, lawn mower, and clothes washer. A well-known myth of exploitation holds the system together: the consumer is a good citizen who will buy and pay on time. He is in fact manipulated by powerful advertising which creates the need to own new products. Television is the most effective tool used by heavy advertisers to achieve this result, but as soon as the various potentials of television such as feedback, easy access for its use by individuals and groups, direct communication between individuals and so forth are realized, the impact of advertising will lessen and at the same time the need for national and international regulation will disappear due to the availability of many points of view.

Architecture cannot be considered art in the city. Major corporations create architectural monuments as part of their advertising image. Modern buildings all bespeak the good taste and high cost of surface materials, but they are not beautiful. They are like the false fronts of frontier towns or the redundant picturesque homes and lawns of suburbia. These buildings reflect the willingness of corporations to pay great sums of money for an impressive public image without any concern for the public, its space or the city itself.

Corporation engineers and governmental agencies should not control the reorganization of artifact systems; this would better be determined by the people of various neighborhoods who can decide for themselves how they want to relate to their systems. The neighborhoods of large cities can become more integrated in terms of all life processes. The people should share in the benefits of local industry. Corporations which represent small minorities should not be allowed to monopolize resources; they should integrate their functions into the needs and desires of neighborhoods. The zoning laws of the past forty years have fractured the city into specialized sectors

Fig. 4. Sculpture Garden, Museum of Modern Art, January–February 1970

The Museum garden opens directly onto the city streets. Although traditional museum policy inhibited constant free access, the gates were opened on two nights a week to the public, free of charge.

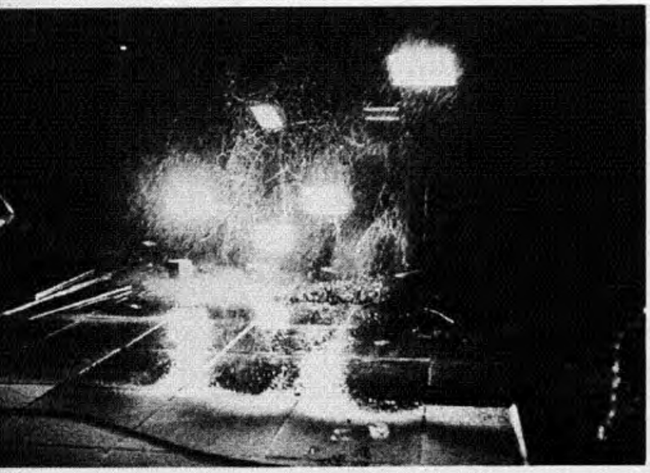
An output system of sixty strobe lights, twenty-eight luminous infrared heaters, and about eighty loudspeakers was installed in variously clustered configurations on the surrounding walls and courtyard of the garden. Information from within the environment was relayed to the output system through a computer signal synthesizing system from a variety of input devices:

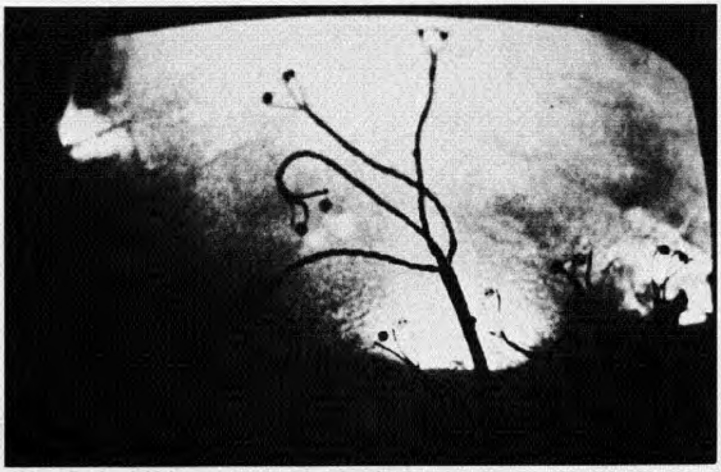
1. closed circuit television scanning the entire space from the rooftops and reading through a photocell matrix directly into the computer
2. localized photo cells, meteorological instruments feeding directly into the signal generator
3. directional microphones in direct feedback loops with loudspeakers
4. photocells in direct feedback loops with infrared heater clusters

There were to be several levels of feedback, producing a synthesis among several systems responsive to the presence and movement of an audience, as well as to weather conditions, the passage of airplanes and cars, and changing amplitude of the sounds of the city. The environment was intended to operate continually night and day for the three-month duration of the show. The computer program for generating output sequences from information on movement of people and other conditions in the space was modified daily throughout the show, and was still mostly unrealized when the end came.

A. One of five infra-red heater complexes within the garden.

B. Photoresistor sensors on one of two television monitors viewing the garden.





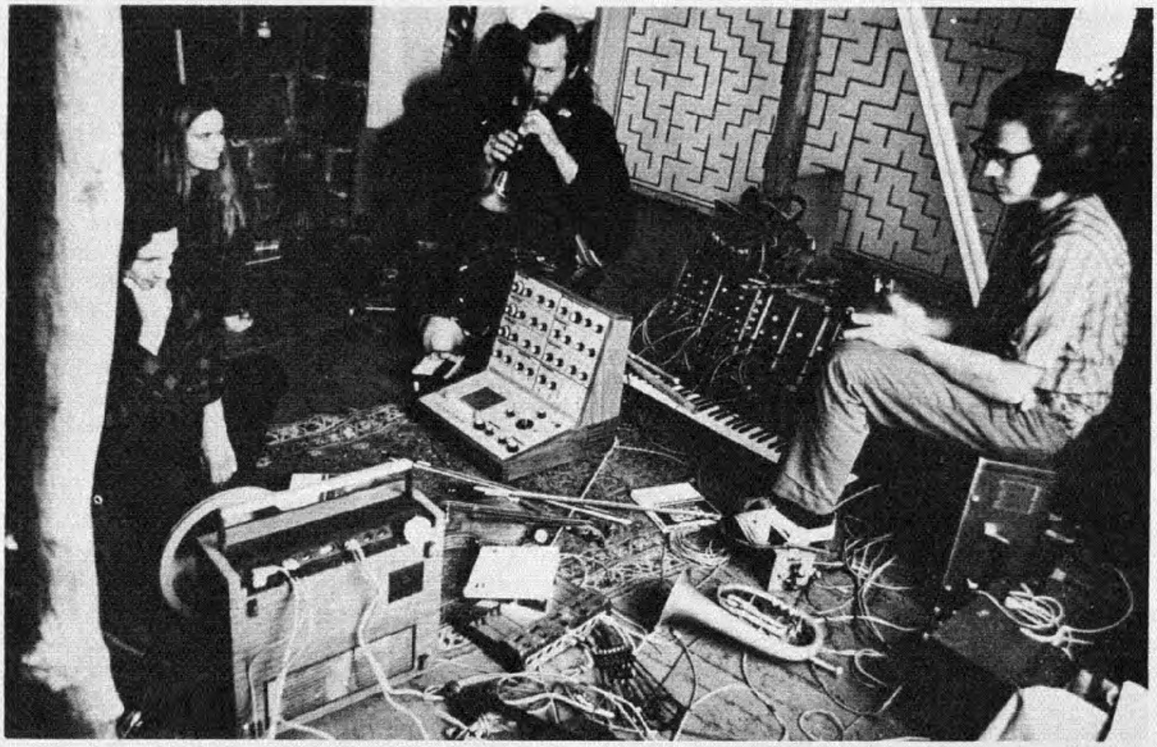


Fig. 5. Collaborative Improvised Sound Sculptures, Oxford, Connecticut, April–May 1970

Violins, sitars, ectaras, gongs, various metal objects, flutes, drums, along with amplified natural and recorded sounds, and electronically synthesized materials.

These events occurred nightly for about a month; each was designated by the name of the dish served at the meal preceding the occasion, which was taped and filmed.

A. Recording of sound.
B. Alpha experiments.

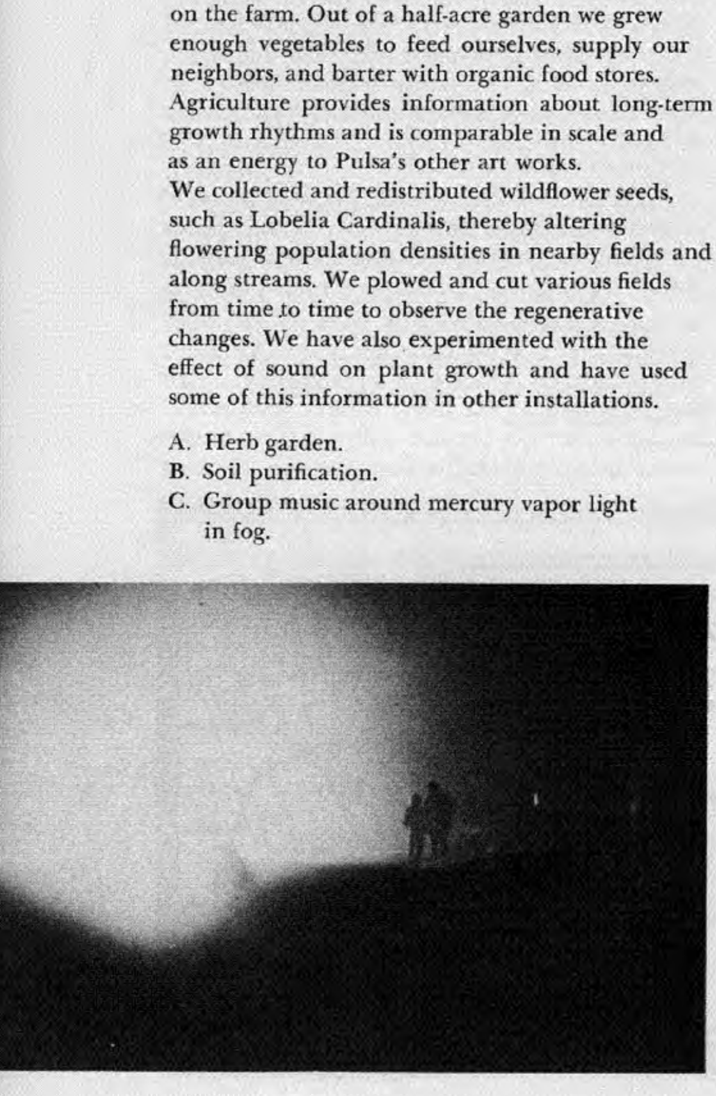
—office buildings, slums, entertainment quarters, and so on—that prevent the harmonious functioning of the city. Television links could connect people for matters of business convenience and the zoning laws should be rewritten to constitute neighborhoods—spaces with a sufficiently large number of people to formulate representative attitudes yet small enough to interact effectively. In these neighborhoods, life-support functions of all sorts, such as gardening, sensorium and housing design and construction, community transport, communication, education, and industrial production would be considered as possible activities chosen by consensus among the inhabitants according to the availability of resources.

These self-contained neighborhoods could be developed further by improvements in public transportation systems so that mobile life styles become more acceptable and cities themselves can have small, fixed populations with flexible public areas, including plug-in life-support systems and open communes, available for transients. Simultaneously, nonmobile life-styles remote from urban centers could be enhanced through improved communication. Government public service programs could solicit individuals' proposals to improve mass transportation and communications systems. Local groups would investigate and approve these proposals, which could then be realized through municipal funds.

Fig. 6. Agriculture, Oxford, Connecticut, Food art

We grow many kinds of vegetables organically on the farm. Out of a half-acre garden we grew enough vegetables to feed ourselves, supply our neighbors, and barter with organic food stores. Agriculture provides information about long-term growth rhythms and is comparable in scale and as an energy to Pulsa's other art works.
We collected and redistributed wildflower seeds, such as Lobelia Cardinalis, thereby altering flowering population densities in nearby fields and along streams. We plowed and cut various fields from time to time to observe the regenerative changes. We have also experimented with the effect of sound on plant growth and have used some of this information in other installations.

A. Herb garden.
B. Soil purification.
C. Group music around mercury vapor light in fog.



The principal means of decentralizing cities, as well as other artifact systems, however, should be accomplished by creatively expanding the interactive awareness of local populations through media that incorporate principles of feedback: environments, programmed events, cable television, tapes, films, and whatever other feedback systems can be conceived and realized with local funds.

Artists have always worked with information structures and as designers of enhanced sensory experience. Today, not limited to exploring formal and material variations within a particular high-art form, the sensibilities of artists can be extremely useful in developing new environments. Artists are now aware of the possibilities beyond single art traditions and are interested in world culture. Examining Pre-Columbian sites, the pyramids of Egypt, or the erotic architecture of India, they see how, embedded in the proper cultural context, art can embody the totality of human knowledge and activity. With this awareness they have begun to explore ways in which art of a similar scale, arising from and manifesting all aspects of culture, can now be made.

Today there are many small centers where people meet, live, make art, and achieve new levels of consciousness. Art is becoming an increasingly integrated part of life. People are providing entertainment and life-support services artfully, for themselves. Artists are taking to the road, traveling between centers, and making available to local groups ideas about new uses of artifact systems.

The concept of art is being expanded. With the advent of increased information services people will have to selectively organize data

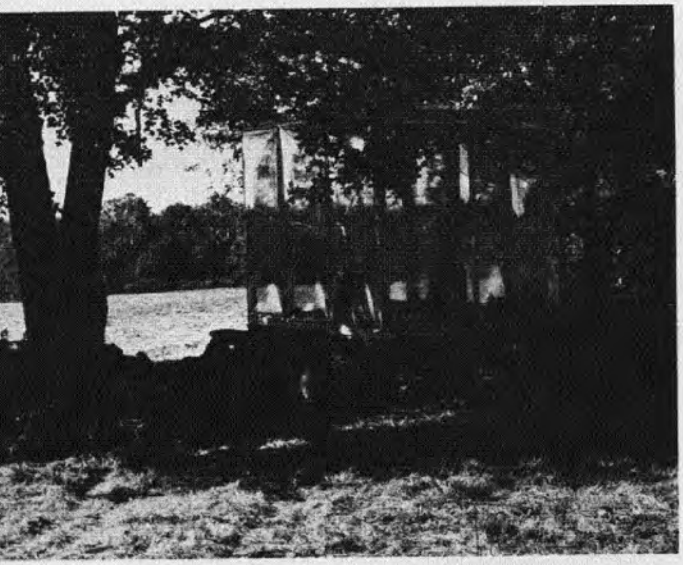
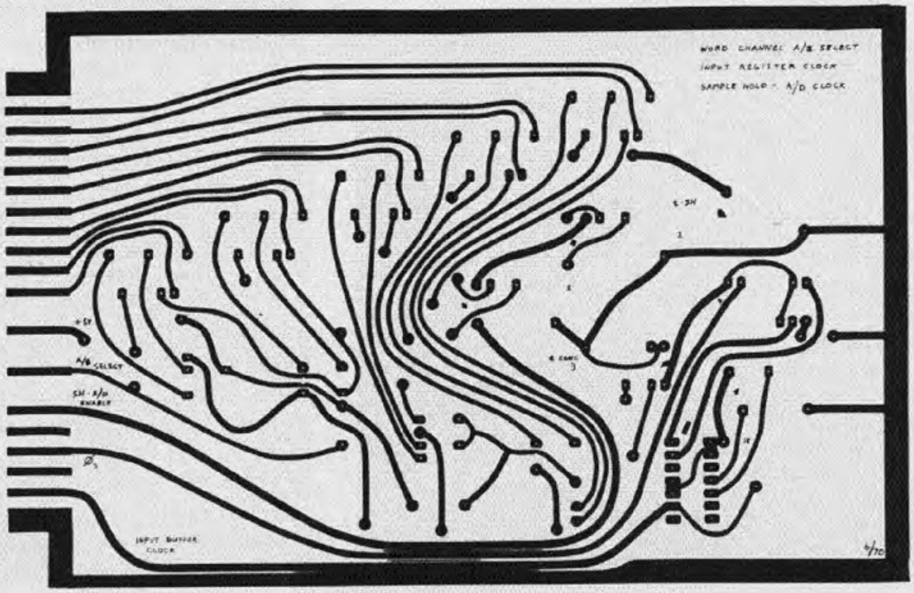


Fig. 7. Architecture

We have made several light-weight transportable shelters which allow contact with the external world and provide adequate protection from the elements. The inflatable wall sections contain dead air insulation while allowing sound to be perceived directionally and natural light to enter as if no structure existed.

During the winter, heat is provided by infra-red illumination during the night and a mylar reflector placed on the north wall which catches the sun during the day.

A Inflatable structure.
B. Circuit diagram: input buffer clock. Information flow as model for neighborhood or village plan.



from their own environment for communication and they also will want to receive cross-sectional inputs from the rest of the world, besides specialized news services. Everyone who does this will be involved in an art process. Data storage retrieval, and computer-assisted structural analysis will constitute some of the tools which will be used to accomplish this process.

Cities and corporations as well as foundations, private patrons, and universities should support art for its own sake. This should be done not with the goal of getting some immediate return such as a new invention, but in recognition of the important creative force that art represents in society. A work of art is complete within itself. It is also a feedback phenomenon which reflects the development and values of a civilization, of a culture as a whole.

Art production is highly subjective, though not necessarily an activity separate from life experiences. At its most basic level, the production of art can be any interaction between two people in the context of a heightened awareness, whether the product is an object, an activity, or a decision. Art is both a way to relate to life and a way to improve it; it is best experienced not only in the historical categories of a museum, but in the actual situations in which people live. Our lives should become more artful. Everyone should become involved not only in the possession or experience of art works, but also in the process of creating art.

Enrollment in art schools is increasing, but due to the expanding concept of art, the institutionalization of art apprenticeship, as it has existed since the time of the Ecole des Beaux Arts, no longer makes sense. Schools are job-oriented institutions intended to certify art teachers and artists, but the teacher market is full and the old gallery system is collapsing. Art cannot be taught from studies of the human figure, nor in the manner of Bauhaus-influenced design and color theories. The way to learn about making art is through contact with artists and art process. The goal is the development of individual creativity.

Research centers which don't offer degrees but are affiliated with universities are one possible solution. Using all available information pools, these nonspecialized research communities would collaborate with various departments within the university and would also be open to persons outside the university. The plan for such a research facility would be to enable artists and students to use all information and technology from any relevant field of study to make works of art. The process of materialization with modification according to how the work evolves is essential to art. Materials for environmental art works could be stockpiled by universities, city neighborhoods, and other organizations in special depots, and recycling of materials would be encouraged.

The concept of the artist as a desperate individual, such as Van Gogh, has been romanticised and forms the basis for exploitation of the artist by art institutions. When art is examined for its own sake outside its competitive institutional context, collaboration between artists offers rewarding possibilities. Throughout the world people are getting together and developing models for new communities. Artists involved in developing art works and information systems and putting them where people live are beginning to find the group sensibility that evolves in collaboration and communication a significant context for their work.

A community of artists is based more upon a willingness to share in the intelligent, life-supporting use of materials than on any common ideology. Basic facilities such as land, capital, transportation, communications, and access to appropriate technology comparable to what is found elsewhere in the current environment must be established. All interaction should be exploratory with the community providing facilities and materials, sites for the display of the works, and an increasingly involved audience. Individual inclination and a naturally evolved sense of respect for group survival would shape the future of the community.

The result of such prolonged interaction would not be a style or a philosophy resulting from the application of high-art principles to utilitarian design. The community's art would consist rather in extending the sensory enhancement of all aspects of community life. From model projects like these, works could be designed to deal with larger systems.

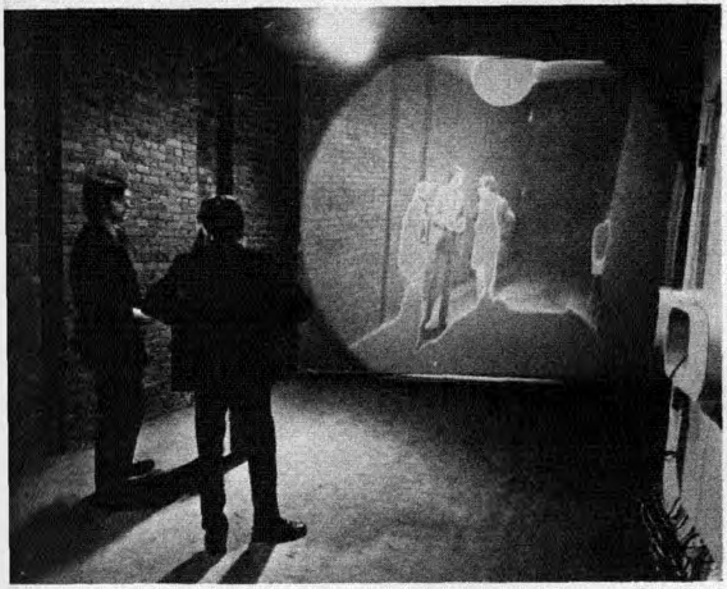
Fig. 8. Television Environments. Yale University, New Haven, Connecticut, October, 1970.

These pieces were developed from a series of proposals made in 1969 regarding television and telephone communications links and space simulation. The installations at Yale University, California Institute of the Arts, and Automation House included delayed and real-time events, feedback, and communication, and made use of video projections, amplified sound systems, a signal synthesizer, a switching matrix and various lighting conditions. We made use of the presence of people as part of the artwork's content as well as its process. We provided a flexible system and determined the spatial coordinates, while the visitors to the space were able to manipulate certain aspects of the equipment such as microphones, cameras, light levels and musical instruments, thereby investigating unknown combinations of events, and creating unique events within the system . . . moving within and participating in the changing nature of the artwork.

In the Automation House exhibition communication occurred throughout the systems. Three floors of the building were linked so that one could speak with a life-size projected image of a person two floors above. This piece made use of both sensual and conceptual information.

A. Telecommunication piece for the University of Kentucky at Lexington, November, 1970.
The two towers segregated men in one building, and women in the other. We set up wall projections and sound in the open lounges which made up the entire top floor of each building. This resulted in a social exchange between the two groups and an increase in hotline communications, and so forth.

B. Automation House, April, 1971, New York.
Photo: Peter Moore.
Video screen with increased beam control producing ghost trails in delayed movement of the viewers on the second floor of Automation House.



Our art has been involved lately with making open sensoriums available for people to live in and enjoy. Our work of the past three years has involved television environments, strobe feedback installations, light/sound events, and infra-red temperature environments. We are interested in taking a given public context (architectural, institutional, or urban) where people come together and enhancing or expanding it. We are interested in transcending the functional political aspects of human experience and generating an abstract aesthetic awareness within an environment which exists primarily for non-aesthetic reasons. In earlier times myth and symbol in art functioned as highly condensed cultural information structures; in our society technology functions in the same way. We want to present these technological systems architecturally to include aesthetic information which is functional but implies a new usefulness in relation to sensation and experience.

The ideas and projects discussed in this article are the result of many group discussions and experiments developed by the Pulsa group. It was written by Patrick Clancy.